

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

changes that come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by United States Letters Patent is:

Sub 07

1. An interconnection system for interconnecting a first electronic device to a second electronic device, both electronic devices utilizing audio and video signals, the interconnection system comprising:

a plurality of electrical conductors for interconnecting the first electronic device and the second electronic device, each of the plurality of electrical conductors having a first end and a second end;

one or more audio connectors, each being attached to the first end of one of the electrical conductors of the plurality of electrical conductors; and

a video connector attached to the first end of each of a subset of the plurality of electrical conductors, the video connector being selectively adaptable for use with either a composite signal format or an S-video signal format such that the interconnection system is selectively usable with either the composite signal format or the S-video signal format.

2. An interconnection system as recited in claim 1, wherein the video connector comprises a male S-video connector for use with the S-video signal format.

3. An interconnection system as recited in claim 2, wherein the video connector further includes an adapter having a female S-video end that can be selectively coupled with the male S-video connector of the video connector and a male RCA end opposite the female S-video end for supporting the composite signal format, wherein the video connector supports the composite video signal format when the adapter is coupled with the male S-video connector.

1 4. An interconnection system as recited in claim 1, wherein the one or more
2 audio connectors comprises a left audio connector and a right audio connector that are
3 capable of transmitting audio signals between the first electronic device and the second
4 electronic device when the interconnection system is used with the composite video format..
5

6 5. An interconnection system as recited in claim 4, wherein the video connector
7 comprises an S-video connector including an S-video audio connector, the S-video audio
8 connector, rather than the left audio connector and the right audio connector, being used to
9 transmit audio signals when the interconnection system is used with the S-video format.
10

11 6. An interconnection system as recited in claim 1, further comprising a mini
12 plug attached to both the second end of said one of the plurality of electrical conductors and
13 the second end of each of said subset of the plurality of electrical conductors, the mini plug
14 having a plurality of contact points.
15

16 7. An interconnection system as recited in claim 6, wherein the plurality of
17 contact points include a first contact point for transmitting left audio signals, a second
18 contact point for transmitting right audio signals, a third contact point for transmitting video
19 chroma signals and a fourth contact point for transmitting video luma signals.
20

21 8. An interconnection system as recited in claim 7, wherein the plurality of
22 contact points further includes a fifth contact point for ground.
23
24

9. An interconnection system as recited in claim 6, wherein the video connector comprises a male S-video connector for use with the S-video signal format.

10. An interconnection system as recited in claim 9, wherein the video connector further includes an adapter having a female S-video end that can be selectively coupled with the male S-video connector of the video connector and a male RCA end opposite the female S-video end for supporting the composite signal format, wherein the video connector supports the composite video signal format when the adapter is coupled with the male S-video connector.

WORKMAN, NYDEGGER & SEELEY

A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

[illegible]

1 11. An interconnection system for interconnecting a first electronic device to a
2 second electronic device, both electronic devices utilizing audio and video signals, the
3 interconnection system comprising:

4 a mini plug at a first end of the interconnection system and having a plurality
5 of contact points, wherein the mini plug can be connected to the first electronic
6 device; and

7 a plurality of electrical conductors for interconnecting the first electronic
8 device and the second electronic device, each of the plurality of electrical conductors
9 having a first end and a second end, wherein the first end of each of the plurality of
10 electrical conductors is connected to one of the contact points of the mini plug; and

11 means for selectively adapting the interconnection system for use with either
12 a composite video signal format or an S-video signal format, the means for
13 selectively adapting the interconnection system being connected to the second end of
14 at least some of the plurality of electrical conductors.

15
16 12. An interconnection system as recited in claim 11, wherein the plurality of
17 contact points include a first contact point for transmitting left audio signals, a second
18 contact point for transmitting right audio signals, a third contact point for transmitting video
19 chroma signals and a fourth contact point for transmitting video luma signals.

20
21 13. An interconnection system as recited in claim 12, wherein the plurality of
22 contact points further includes a fifth contact point for ground.

23
24

1 14. An interconnection system as recited in claim 11, wherein the means for
2 selectively adapting the interconnection system comprises:

3 one or more audio connectors, each being attached to the second end of one
4 of the electrical conductors of the plurality of electrical conductors; and

5 a video connector attached to the second end of each of a subset of the
6 plurality of electrical conductors, the video connector being selectively adaptable for
7 use with either a composite signal format or an S-video signal format such that the
8 interconnection system is selectively usable with either the composite signal format
9 or the S-video signal format.

10
11 15. An interconnection system as recited in claim 11, further comprising a mini
12 plug receptacle included in the first electronic device, the mini plug receptacle enabling the
13 mini plug end to be connected to the first electronic device.

1 16. In a system that includes at least a first electronic device and a second
2 electronic device, a method for communicating signals between the first electronic device
3 and the second electronic device using either a composite signal format or an S-video signal
4 format, the method comprising the steps of:

5 connecting the first electronic device with the second electronic device with
6 an interconnection system that is selectively adaptable to transmit signals using
7 either a composite video signal or an S-video signals, the interconnection system,
8 when connecting the first electronic device with the second electronic device, being
9 adapted to transmit the signal using a particular signal format selected from the
10 composite video signal format and the S-video signal format;

11 at the first electronic device, determining whether the particular signal format
12 is the composite signal format or the S-video signal format; and

13 based on the determination made in the determining step, communicating
14 between the first electronic device and the second electronic device using the
15 particular signal format.

16
17 17. A method as recited in claim 16, wherein the interconnection system
18 comprises:

19 a plurality of electrical conductors;
20 a mini plug for connecting the plurality of electrical conductors to the first
21 electronic device; and
22 at least one an audio connector and at least one video connector for
23 connecting the plurality of electrical conductors to the second electronic device,
24

1 wherein the second electronic device utilizes one of a composite signal format and an
2 S-video signal format.

3
4 18. A method as recited in claim 17, wherein at least one video connector
5 comprises a male S-video connector having a plurality of pins, and wherein the
6 interconnection system further includes an adapter for use when the particular signal format
7 is the composite signal format, the adapter having a female S-video end for mating with the
8 male S-video connector and a male RCA end opposite the female S-video end for
9 connecting the plurality of electrical conductors to the second electronic device.

10
11 19. A method as recited in claim 18, wherein two of the plurality of pins of the
12 male S-video connector are shorted when the male S-video connector is mated with the
13 female S-video end.

14
15 20. A method as recited in claim 18, wherein the step of determining comprises
16 the step of measuring the impedance of associated with selected electrical connectors of the
17 plurality of electrical connectors.

18
19 21. A method as recited in claim 20, wherein the step of measuring the
20 impedance is conducted using a differential amplifier.

21
22 22. A method as recited in claim 20, wherein the step of measuring the
23 impedance is conducted using an impedance sensor.

24

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

23. A method as recited in claim 17, further comprising the step of recognizing, by the first electronic device, that the mini plug has been inserted into a receptacle at the first electronic device, the step of recognizing further comprising the step of sensing a physical displacement of a component of the receptacle as the mini plug is inserted into the receptacle.

24. A method as recited in claim 17, further comprising the step of determining, at the first electronic device, whether the signal is transmitted into or out of the second electronic device.

1 25. A system for connecting a first electronic device to a second electronic
2 device and for transmitting signals between the first electronic device and the second
3 electronic device, the system comprising:

4 an interconnection system including:

5 a mini plug at a first end of the interconnection system and having a
6 plurality of contact points, wherein the mini plug can be connected to the first
7 electronic device; and

8 a plurality of electrical conductors for interconnecting the first
9 electronic device and the second electronic device, each of the plurality of
10 electrical conductors having a first end and a second end, wherein the first
11 end of each of the plurality of electrical conductors is connected to one of the
12 contact points of the mini plug; and

13 means for selectively adapting the interconnection system for use with
14 either a composite video signal format or an S-video signal format, the means
15 for selectively adapting the interconnection system being connected to the
16 second end of at least some of the plurality of electrical conductors; and

17 a receptacle that is included in the first electronic device and can couple with
18 the mini plug.

19
20 26. A system as recited in claim 25, wherein when the receptacle is coupled with
21 the mini plug, each of the plurality of contact points of the mini plug being in electrical
22 contact with one of a plurality of contact points of the socket.
23
24

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

27. A system as recited in claim 26, wherein the receptacle includes another contact point, in addition to the plurality of contact points of the receptacle, the additional contact point being capable of ground sensing.

28. A system as recited in claim 25, wherein one of the plurality of contact points of the mini plug is for video chroma and another of the plurality of contact points of the mini plug is for video luma.

1 29. In a home entertainment system that includes a plurality of electronic devices
2 and utilizes audio and video signals, a method for transmitting either composite or S-video
3 signals through an interconnection system, the method comprising the steps of:

4 coupling a mini plug positioned at a first end of the interconnection system to
5 a first electronic device so as to enable the transmission of audio and video signals
6 between the interconnection system and the first electronic device; and

7 coupling a connector positioned at a second, opposite end of the
8 interconnection system to a second consumer electronic device so as to enable the
9 transmission of the audio and video signals between the interconnection system and
10 the second electronic device, wherein the connector is selectively adaptable to be
11 used to transmit the audio and video signals in either a composite signal format or an
12 S-video signal format.

13
14 30. A method as recited in claim 29, wherein the connector includes an S-video
15 connector when the audio and video signals are to be transmitted between the
16 interconnection system and the second electronic device in the S-video signal format.

17
18 31. A method as recited in claim 29, wherein the connector includes an S-video
19 connector having a plurality of pins coupled with an adapter when the audio and video
20 signals are to be transmitted in the composite signal format, the adapter comprising:

21 an RCA end that mates with the second consumer electronic device; and

22 an S-video end that mates with the S-video connector, wherein two of the
23 plurality of pins of the S-video connector are shorted when the S-video end is mated
24 with the S-video connector.